

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3573

KENTUCKY & INDIANA TERMINAL RAILROAD COMPANY

IN RE ACCIDENT

AT LOUISVILLE, KY., ON

MAY 2, 1954

Report No. 3573

SUMMARY

Date: May 2, 1954

Railroad: Kentucky & Indiana Terminal Railroad

Location: Louisville, Ky.

Kind of accident: Employee's clothing became wrapped around revolving radiator cooling fan shaft, pulling his body against the shaft.

Locomotive unit number: Diesel-electric unit 54

Train involved: No train

Speed: Standing

Operation: Switching service

Track: Ready track

Time: 2:40 p.m.

Weather: Cloudy, raining prior to time of accident.

Casualties: 1 killed

Cause: Clothing of employee became entangled around an unguarded fan shaft.

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3573

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION
REPORTS UNDER THE LOCOMOTIVE INSPECTION ACT
OF FEBRUARY 17, 1911, AS AMENDED

KENTUCKY & INDIANA TERMINAL RAILROAD

June 29, 1954

Accident at Louisville, Ky., on May 2, 1954, caused by poorly
located water-glass drain valve on Diesel-electric unit.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

May 2, 1954, about 2:40 p.m., at Louisville, Ky., while Kentucky & Indiana Terminal Railroad Diesel-electric locomotive unit 54 was standing on the ready track, a machinist attempted to obtain a sample of water from the water-glass drain cock. His clothing became wrapped around the revolving radiator cooling fan shaft, and he was whirled about until the clothing was torn from his body. The machinist was fatally injured and died 11½ hours later.

¹Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.

DESCRIPTION OF ACCIDENT

Kentucky & Indiana Terminal Railroad Diesel-electric locomotive unit No. 54, used in switching service, arrived on the inbound track at Louisville, Ky., at 2:31 p.m., May 2, 1954, and then was taken to the ready track to be returned to service. A machinist and helper went to Diesel units on the ready track to obtain samples of water and oil. By agreement between them, the machinist was to take the water samples and the helper the oil samples. The machinist stopped at unit 54 and the helper went on to another unit which was parked ahead of unit 54. The helper obtained sample of oil from that unit and en route to testing room passed on the left side of unit 54. He then returned to the right side of unit 54 and found the machinist crawling on the right running board. He was badly injured, and all of his clothing except shoes and socks had been stripped off. In reply to the helper's inquiry as to what had happened, the machinist replied "Belts got me". The accident occurred about 2:40 p.m., approximately 9 minutes after the unit arrived on the inbound track.

The machinist was taken to a hospital where he died at 2:10 a.m., May 3, 1954.

The machinist was the only person on the unit at the time of the accident and there were no eye witnesses. Statements made by persons who assembled subsequent to the accident indicated that the machinist had entered the compartment by the right door to obtain a sample of the water and as he attempted to reach the water-glass drain cock some garment, possibly his raincoat which was light weight, cravenetted material, contacted the revolving radiator cooling fan shaft, became wrapped around it and pulled his body against the shaft. His clothing was found wrapped around the shaft and blood stains were found on the fan shaft bearing cap. His hat, water sample can, flashlight, and other tools were found on the deck beneath the shaft.

DESCRIPTION OF LOCOMOTIVE UNIT

Locomotive unit 54 was built by the Baldwin Locomotive Works at Eddystone, Pa., in September 1948; Diesel-electric switching type B-B; power was supplied by a 606-SC, 6-cylinder, 1000 horsepower, Diesel engine with direct connected generator; all wheels were motor driven; wheels 40 inches in diameter when new; total weight in working order 230,000 pounds; maximum tractive effort 69,000 pounds at 30 percent adhesion.

DESCRIPTION OF PARTS INVOLVED

The radiator cooling fan shaft involved turned clockwise when fan was viewed from the front, at 600 revolutions per minute at idling speed. The involved and exposed part of the shaft was $18\text{-}1\frac{1}{4}$ inches in length. The distance from the center of the fan shaft to the left hood door was approximately $37\frac{1}{2}$ inches.

The water glass from which samples of water were taken was located on the left side of the engine compartment adjacent to the side wall. The drain cock was approximately $77\frac{1}{2}$ inches above the engine room floor.

Marks on the cover of the traction motor blower fan and the top of the pillow block or pillow block support on the right side indicated these parts had been used extensively to stand and/or kneel upon when samples of water were drawn from the water-glass drain valve. The location of the drain valve and the michiana filter which occupied much of the available space made collection of samples from the left side very inconvenient as it was necessary to assume an awkward and strained position when taking samples at this point.

EXAMINATION OF PARTS INVOLVED

The fan shaft was very smooth. Grease had accumulated on it from the shaft bearing and this coating could have acted as an adhesive. The raincoat was light weight flimsy material with silk lining. There was no evidence that the drive belts had caught the raincoat or other clothing. The shaft bearing on the engine side and the engine side of the pillow block and guards had an accumulation of dirt and grease of long standing which had not been disturbed.

INSPECTION AND REPAIR REPORTS

Last annual inspection was made at Louisville, Ky., on October 12, 1953. Last monthly inspection was made at Louisville on April 5, 1954. Last daily inspection report was shown made at Louisville on May 2, at 3:00 p.m., however, the inbound engineer who made the report stated the unit was actually turned in at 2:31 p.m. and that it was his practice to show on work reports the time due in instead of the actual time of arrival.

Daily inspection and repair reports for a period of 30 days prior to the accident were examined. No defects were reported that had any bearing on the accident.

SUMMARY OF EVIDENCE

The machinist helper stated that he worked with the machinist on May 2 from 7:15 a.m. until the accident occurred about 2:40 p.m., but he was not with the machinist at the time of the accident. They had worked at the refueling house together, after which the machinist went to the locker room to get his raincoat before going to their next task which was to take samples of water and oil from the Diesel units on the ready track; he was to obtain the oil samples and the machinist the water samples; he preceded the machinist and started his work. The last time he saw the machinist before the accident he was on the left running board of unit 54 and was wearing the raincoat. After obtaining oil sample from unit 46 which was parked ahead of unit 54 he passed unit 54 on the left side en route to deliver the sample to the testing room; as he passed unit 54 he noted the engine appeared to be laboring as if the unit were pulling five or six cars. After delivering the oil he started back toward unit 54 and observed that the laboring had stopped and the engine had returned to normal idling. He went to the right side of the unit and found the injured machinist, whose clothing had been torn off, crawling on the running board. He propped the injured man against the handholds; ran to the roundhouse office and reported the accident then returned and remained with the injured man until assistance arrived. He estimated it was about five minutes from the time he saw the machinist on the left running board until he found him on the right running board badly injured.

The assistant roundhouse foreman stated that the machinist was fully familiar with the duties of the job to which he was regularly assigned. When notified of the accident he immediately went to the scene and found the injured machinist sitting on the right running board held by the helper. Unit 54 was moved to the roundhouse and the machinist was taken into the locker room to await the ambulance. The injured man was conscious during the movement which took approximately 10 minutes but made no statement as to how he had been injured. After unit 54 was placed in the roundhouse he and the master mechanic entered through the open right compartment door, to make inspection. Upon entering the doorway he saw clothing wrapped around the radiator cooling fan shaft. The engine was in operation. Several small blood stains were found on a pillow block approximately 36 inches off the floor. The machinist's hat, water sample can, flashlight, 8-inch Stilson wrench, screw driver, and a 3/8-inch box wrench were found on the deck beneath the shaft. His wallet was found wedged between the hood roof and conduit pipe over right door.

The electrical foreman stated that he hurried to the scene of the accident and found the machinist sitting on the right running board. He gave what aid he could and later accompanied the injured man to the hospital. In the meantime he looked into engine room and saw the clothing wrapped around the fan shaft. He had the engine shut down after the injured machinist had been removed from the unit at the roundhouse. The left front door was not open, nor were any doors on left side open.

DISCUSSION

Investigation developed that the location of the water cock from which samples were taken was such that employees had found it necessary to assume an awkward and uncomfortable position when taking water samples from the left side of the fan. Evidence indicates that employees had used the cover of the traction motor blower fan and the pillow block and its support for standing and kneeling purposes while they reached across the unguarded fan shaft to the water-glass drain cock to obtain water samples. Apparently the hazard resulting from juxtaposition to unguarded moving parts was not recognized by men who were presumed to be qualified by training and experience for work within hoods of Diesel-electric units. It is evident the assumption that the hoods of this type locomotive unit provide protection for operating men and that men required to work within the hoods are trained to avoid accident is not conclusive.

RECOMMENDATION

It is recommended that on locomotive units owned by this railroad the cocks or valves from which liquid samples be drawn be conveniently and safely located and that exposed moving parts be properly guarded against personal contact.

CAUSE OF ACCIDENT

It is found that this accident was caused by clothing of employee becoming entangled around an unguarded fan shaft.

Dated at Washington, D. C. this 29th day
of June, 1954.

By the Commission, Commissioner Clarke.

SEAL

GEORGE W. LAIRD,

Secretary.

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DISCUSSION

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CONCLUSIONS

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